REMARKS

Generally

The Examiner's suggestions regarding corrections to the drawings and specification are appreciated. The undersigned has attended to each suggestion, thereby clearing each objection.

Regarding the rejection of Claims 21 – 30 under 35 USC §101, application of the PTO's own *Guidelines for Subject Matter Eligibility*, 11/22/2005 ("the Guidelines") shows that the invention, as described in those claims is patentable. As one non-limiting basis for patentability, the claimed subject matter can be viewed as patentable functional descriptive material as described in ANNEX IV Computer-Related Nonstatutory Subject Matter of the Guidelines. The undersigned renews each argument made in support of the patentability of these claims.

In order to expedite prosecution, Claims 31-40 have been added. These new claims are patterned on previously presented claims 21-30 with an additional limitation explicitly claiming "displaying the result of the operation on a display of the digital computer."

Drawings

The OA requested that Figure 6 be corrected for typographical errors. Figure 6 has been corrected. Specifically, "Gets et operation and features" in step 30 was corrected to "Get set operation and features"; and "Free result rescources" in step 60 was corrected to "Free result resources."

Specification

The OA required correction of paragraph [00127]. Paragraph [00127] has been corrected.

Claim Rejections – 35 USC §101

The undersigned renews each argument made with regard to the patentability of claims 21-30. The PTO has yet to state a *prima facie* case of unpatentability under 35 USC §101. An interview and repeated conversations with the Examiner have indicated that a "§101 panel" that has not read the application and is not accountable for issuing unsupported summary rejections refuses to indicate allowable subject matter.

The undersigned draws the Examiner's attention to Annex IV of the *Guidelines for Subject Matter Eligibility*, OG Date: 22 November 2005 for one basis under which the claimed subject matter (at least Claims 26-30) is patentable (**bold** emphasis added).

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, **"functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to suppo rt specific data manipulation functions."** The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangem ent of data.
>
> Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. **When functional descriptive material is recorded on some computer -readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.** Compare In re Lowry, 32 F.3d 1579, 1583 -84, 32 USPQ2d 1031, 1035 (Fed. Ci r. 1994) (**claim to data structure stored on a computer readable medium that increases computer efficiency held statutory**) and Warmerdam, 33 F.3d at 1360 -61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d

at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). …

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. **In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.**

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. **In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.** See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions..

The subject matter of Claims 26-39 can be seen as functional descriptive material, e.g., consisting of data structures (regions represented as tuples) and computer programs which impart functionality when employed as a computer component. Regions represented as tuples present a physical or logical relationship among the tuples, designed to support specific data manipulation functions such as Boolean operations.

In Claims 26-30, a *computer program product* including *a computer readable medium* and various *modules* is claimed. In each case, the claims explicitly call for an interrelationship between the data structure (e.g., regions represented as vector tuples), and the computer software and hardware components (e.g., a digital computer, a computer program product) which permit the data structure's functionality (e.g., vector tuple representation of the result of a Boolean operation between regions) to be realized, i.e., a tangible result.

For the above reasons, the undersigned requests that the rejection of Claims 21-30 be withdrawn.

New Claims

In order to expedite prosecution, Claims 31-40 have been added. These new claims are patterned on previously presented claims 21-30 with an additional limitation explicitly claiming "displaying the result of the operation on a display of the digital computer."

Support for the added clause can be found at various places in the original disclosure, including:

> *[00117] Referring back to the software flow of Fig. 6, after the final set operation product is calculated in step 40, the software method of the present invention proceeds through step 50 where the set operation product is displayed and/or otherwise output for the user.*

CONCLUSION

No new matter has been added to the disclosure. An examination on the merits at your earliest convenience is respectfully requested. Please contact undersigned with any questions that will expedite prosecution.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1458, and please credit any excess fees to such deposit account.

Respectfully submitted,

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